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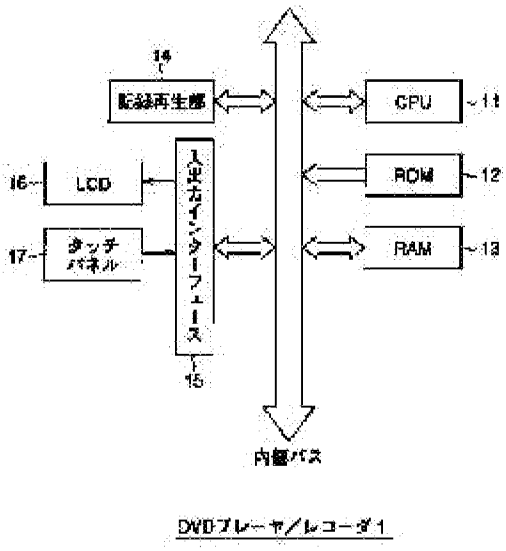
(54) INFORMATION RECORDING MEDIUM, STORAGE MEDIUM, INFORMATION REPRODUCING DEVICE AND METHOD, INFORMATION RECORDING AND REPRODUCING DEVICE AND METHOD, PROVIDING MEDIUM

(57)Abstract:

PROBLEM TO BE SOLVED: To enable information recorded in an information recording medium to be used by only the prescribed device corresponding to the information recording medium.

SOLUTION: A ROM 12 stores data discriminating a DVD player/recorder 1. A recording and reproducing section 14 records data stored in the ROM 12 to the DVD, and reproduces data recorded to the DVD and used to discriminate the DVD player/recorder 1. A CPU 11 controls the recording and reproducing section 14 corresponding to data stored in the ROM 12 and data reproduced by the recording and reproducing section 14.



* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]This invention An information recording medium, a storage, an information reproducing device and a method, information storage playback equipment, and a method, And it is related with the information recording medium, the storage, the information reproducing device and the method, the information storage playback equipment and the method of having enabled it to use the information especially recorded on the information recording medium only with the predetermined device corresponding to an information recording medium, and a distribution medium about a distribution medium.
[0002]
[Description of the Prior Art]A digital video tape, a digital versatile disc (DVD:DigitalVersatile Disc), etc. code and record the signal of a picture and a sound. The contents recorded on the digital video tape or DVD using a digital video recorder or a DVD recorder, Even if it copies to other digital video tapes or DVD-Rs (Digital Versatile Disc Recordable), the picture and sound which were copied hardly deteriorate as compared with the picture of a copied material, and a sound.
[0003]Also when copying the program recorded on CD-ROM (Compact Disc Read Only Memory) to CD-R (Compact Disc Recordable) or CD-RW (Compact Disc Rewritable), The contents of the program do not deteriorate.
[0004]Thus, it is equivalent to infringement of an owner of a copyright to transfer a picture and a sound or the digital video tape that copied the program, DVD-R, CD-R, or CD-RW to other persons without just title.
[0005]Then, in order to prevent infringement of the copyright by a copy, the contents enciphered beforehand are recorded on information recording media, such as DVD or CD, A decryption key is passed only to the user who paid the predetermined fee via a communication

line, and the system by which only the user who paid the predetermined fee can use the contents recorded on the information recording medium is proposed.

[0006]

[Problem(s) to be Solved by the Invention]Also in information recording media, such as DVD or CD which recorded the enciphered contents, with however, the information recording medium with which the user copied the contents. When a decryption key is passed to other users, other users can use the contents recorded on the information recording medium like the case where a predetermined fee is paid regularly.

[0007]This invention is made in view of such a situation, and A digital video tape, It enables it to use the information recorded on the information recording medium only with the predetermined information storage playback equipment corresponding to information recording media, such as DVD, DVD-R, CD-R, or CD-RW, and aims at enabling it to protect a copy more certainly.

[0008]

[Means for Solving the Problem]The information recording medium according to claim 1 is provided with a record section where hysteresis information which means having been reproduced once at least is recorded.

[0009]written this invention is characterized by it having been alike and comprising the following at claim 3.

A recording device which records hysteresis information as which an information recording medium expresses having been reproduced once at least on an information recording medium.

A reproduction means which reproduces hysteresis information which a recording device recorded on an information recording medium.

A control means which controls reproduction of information currently recorded on an information recording medium corresponding to hysteresis information which a reproduction means reproduced.

[0010]written this invention is characterized by it having been alike and comprising the following at claim 5.

A record step which records hysteresis information as which an information recording medium expresses having been reproduced once at least on an information recording medium.

Regeneration steps which reproduce hysteresis information recorded on an information recording medium at a record step.

A control step which controls reproduction of information currently recorded on an information recording medium corresponding to hysteresis information reproduced by regeneration steps.

[0011]A record step at which the distribution medium according to claim 6 records hysteresis

information showing an information recording medium having been once reproduced at least by information reproducing device on an information recording medium, Regeneration steps which reproduce hysteresis information recorded on an information recording medium at a record step, Corresponding to hysteresis information reproduced by regeneration steps, a program which a computer which performs processing containing a control step which controls reproduction of information currently recorded on an information recording medium can read is provided.

[0012]Written this invention is characterized by playback equipment comprising the following at claim 7.

A recording device which records hysteresis information as which an information recording medium expresses what was recorded once at least on an information recording medium.

A reproduction means which reproduces hysteresis information which a recording device recorded on an information recording medium.

A control means which controls record or reproduction of information to an information recording medium corresponding to hysteresis information which a reproduction means reproduced.

[0013]Written this invention is characterized by a regeneration method comprising the following at claim 10.

A record step which records hysteresis information as which an information recording medium expresses what was recorded once at least on an information recording medium.

Regeneration steps which reproduce hysteresis information recorded on an information recording medium at a record step.

A control step which controls record or reproduction of information to an information recording medium corresponding to hysteresis information reproduced by regeneration steps.

[0014]A record step at which the distribution medium according to claim 11 records hysteresis information showing an information recording medium having been once recorded on information storage playback equipment at least on an information recording medium, Regeneration steps which reproduce hysteresis information recorded on an information recording medium at a record step, Corresponding to hysteresis information reproduced by regeneration steps, a program which a computer which performs processing containing a control step which controls record or reproduction of information to an information recording medium can read is provided.

[0015]The information recording medium according to claim 12 is provided with an identification device on which identification information which identifies an information recording medium or an information reproducing device is recorded.

[0016]written this invention is characterized by it having been alike and comprising the following at claim 14.
A reproduction means which reproduces identification information currently recorded on an identification device.
A control means which controls reproduction of information currently recorded on an information recording medium corresponding to identification information which a reproduction means reproduced.

[0017]written this invention is characterized by it having been alike and comprising the following at claim 16.
Regeneration steps which reproduce identification information currently recorded on an identification device.
A control step which controls reproduction of information currently recorded on an information recording medium corresponding to identification information reproduced by regeneration steps.

[0018]Regeneration steps which reproduce identification information by which the distribution medium according to claim 17 is recorded on an information reproducing device by identification device, Corresponding to identification information reproduced by regeneration steps, a program which a computer which performs processing containing a control step which controls reproduction of information currently recorded on an information recording medium can read is provided.
[0019]Written this invention is characterized by playback equipment comprising the following at claim 18.
A memory measure which memorizes information identification data.
A recording device which records information identification data on an information recording medium.
A reproduction means which reproduces information identification data which a recording device recorded on an information recording medium.
A control means which controls record or reproduction to an information recording medium corresponding to the comparison result as compared with information identification data memorized by memory measure in information identification data which a reproduction means reproduced.

[0020]Written this invention is characterized by a regeneration method comprising the following at claim 19.
A memory step which memorizes information identification data.

A record step which records information identification data on an information recording medium.
Regeneration steps which reproduce information identification data recorded on an information recording medium at a record step.
A control step which controls record or reproduction to an information recording medium corresponding to the comparison result as compared with information identification data memorized by a memory step in information identification data reproduced by regeneration steps.

[0021]A memory step the distribution medium according to claim 20 remembers information identification data to be to information storage playback equipment, A record step which records information identification data on an information recording medium, and regeneration steps which reproduce information identification data recorded on an information recording medium at a record step, Information identification data reproduced by regeneration steps is compared with information identification data memorized by a memory step, A program which a computer which performs processing containing a control step which controls record or reproduction to an information recording medium corresponding to the comparison result can read is provided.
[0022]Identification information of an information recording medium and identification information of an information reproducing device by which the storage according to claim 21 is reproduced with an information reproducing device are memorized.
[0023]A memory measure the information reproducing device according to claim 22 remembers the 3rd identification information that identifies an information reproducing device to be, A reproduction means which reproduces the 4th identification information that identifies an information recording medium currently recorded on an information recording medium, The 3rd identification information that compares the 4th identification information that a reproduction means reproduced with the 1st identification information memorized by storage, and is memorized by memory measure, The 2nd identification information memorized by storage is compared and it has a control means which controls reproduction of information currently recorded on an information recording medium corresponding to the comparison result.
[0024]A memory step the information reproduction mode according to claim 23 remembers the 3rd identification information that identifies an information reproducing device to be, Regeneration steps which reproduce the 4th identification information that identifies an information recording medium currently recorded on an information recording medium, The 3rd identification information that compares the 4th identification information reproduced by regeneration steps with the 1st identification information memorized by storage, and is

memorized by a memory step, The 2nd identification information memorized by storage is compared and a control means which controls reproduction of information currently recorded on an information recording medium corresponding to the comparison result is included.
[0025]A memory step the distribution medium according to claim 24 remembers the 3rd identification information that identifies an information reproducing device to an information reproducing device to be, Regeneration steps which reproduce the 4th identification information that identifies an information recording medium currently recorded on an information recording medium, The 3rd identification information that compares the 4th identification information reproduced by regeneration steps with the 1st identification information memorized by storage, and is memorized by a memory step, The 2nd identification information memorized by storage is compared and a program which a computer which performs processing including a control means which controls reproduction of information currently recorded on an information recording medium corresponding to the comparison result can read is provided.
[0026]In the information recording medium according to claim 1, hysteresis information which means having been reproduced once at least is recorded.
[0027]In the information reproducing device according to claim 3, the information reproduction mode according to claim 5, and the distribution medium according to claim 6, Hysteresis information which recorded hysteresis information as which an information recording medium expresses having been reproduced once at least on an information recording medium, and was recorded on an information recording medium is reproduced, and reproduction of information currently recorded on an information recording medium is controlled corresponding to reproduced hysteresis information.
[0028]In the information storage playback equipment according to claim 7, the information storage regeneration method according to claim 10, and the distribution medium according to claim 11, Hysteresis information which recorded hysteresis information as which an information recording medium expresses what was recorded once at least on an information recording medium, and was recorded on an information recording medium is reproduced, and record or reproduction of information to an information recording medium is controlled corresponding to reproduced hysteresis information.
[0029]In the information recording medium according to claim 12, identification information which identifies an information recording medium or an information reproducing device to an identification device is recorded.
[0030]In the information reproducing device according to claim 14, the information reproduction mode according to claim 16, and the distribution medium according to claim 17, reproduction of information which reproduces identification information currently recorded on an identification device, and is recorded on an information recording medium corresponding to

reproduced identification information is controlled.
[0031]In the information storage playback equipment according to claim 18, the information storage regeneration method according to claim 19, and the distribution medium according to claim 20, Information identification data which memorizes information identification data, reproduces information identification data which recorded information identification data on an information recording medium, and was recorded on an information recording medium, and is remembered to be the reproduced information identification data is compared, and record or reproduction is controlled corresponding to the comparison result.
[0032]In the storage according to claim 21, identification information of an information recording medium and identification information of an information reproducing device which are reproduced by an information reproducing device are memorized.
[0033]In the information reproducing device according to claim 22, the information reproduction mode according to claim 23, and the distribution medium according to claim 24, The 4th identification information that memorized the 3rd identification information that identifies an information reproducing device, reproduced the 4th identification information that identifies an information recording medium currently recorded on an information recording medium, and was reproduced, The 1st identification information memorized by storage is compared, the 3rd identification information memorized is compared with the 2nd identification information memorized by storage, and reproduction of information currently recorded on an information recording medium corresponding to the comparison result is controlled.
[0034]
[Embodiment of the Invention]Although an embodiment of the invention is described below, it is as follows, when an embodiment [/ in the parenthesis after each means] (however, an example) is added and the feature of this invention is described, in order to clarify correspondence relation between each means of an invention given in a claim, and following embodiments. However, of course, this statement does not mean limiting to what indicated each means.
[0035]That is, the information recording medium according to claim 1 is provided with the record section (for example, recording track 21 of drawing 3) where the hysteresis information which means having been reproduced once at least is recorded.
[0036]written this invention is characterized by it having been alike and comprising the following at claim 3.
The recording device which records the hysteresis information as which an information recording medium expresses having been reproduced once at least on an information recording medium (for example, recording reproduction section 14 of drawing 2).
The reproduction means which reproduces the hysteresis information which the recording device recorded on the information recording medium (for example, recording reproduction

section 14 of drawing 2).
The control means which controls reproduction of the information currently recorded on the information recording medium corresponding to the hysteresis information which the reproduction means reproduced (for example, CPU11 of drawing 2).

[0037]Written this invention is characterized by playback equipment comprising the following at claim 7.
The recording device which records the hysteresis information as which an information recording medium expresses what was recorded once at least on an information recording medium (for example, recording reproduction section 14 of drawing 18).
The reproduction means which reproduces the hysteresis information which the recording device recorded on the information recording medium (for example, recording reproduction section 14 of drawing 18).
The control means which controls the record or reproduction of information to an information recording medium corresponding to the hysteresis information which the reproduction means reproduced (for example, CPU11 of drawing 18).

[0038]The information recording medium according to claim 12 is provided with the identification device (for example, seal 41 of drawing 10) on which the identification information which identifies an information recording medium or an information reproducing device is recorded.
[0039]written this invention is characterized by it having been alike and comprising the following at claim 14.
The reproduction means which reproduces the identification information currently recorded on the identification device (for example, seal data reading part 31 of drawing 9).
The control means which controls reproduction of the information currently recorded on the information recording medium corresponding to the identification information which the reproduction means reproduced (for example, CPU11 of drawing 9).

[0040]Written this invention is characterized by playback equipment comprising the following at claim 18.
The memory measure which memorizes information identification data (for example, EEPROM18 of drawing 21).
The recording device which records information identification data on an information recording medium (for example, recording reproduction section 14 of drawing 21).
The reproduction means which reproduces the information identification data which the recording device recorded on the information recording medium (for example, recording

reproduction section 14 of drawing 21).
The control means which controls record or reproduction corresponding to the comparison result as compared with the information identification data memorized by the memory measure in the information identification data which the reproduction means reproduced (for example, CPU11 of drawing 21).

[0041]The identification information of an information recording medium and the identification information of an information reproducing device by which the storage (for example, RAM card 10 of drawing 15) according to claim 21 is reproduced with an information reproducing device are memorized.
[0042]The memory measure (for example, ROM12 of drawing 15) the information reproducing device according to claim 22 remembers the 3rd identification information that identifies an information reproducing device to be, The reproduction means (for example, recording reproduction section 14 of drawing 15) which reproduces the 4th identification information that identifies the information recording medium currently recorded on the information recording medium, The 3rd identification information that compares the 4th identification information that the reproduction means reproduced with the 1st identification information memorized by the storage, and is memorized by the memory measure, The 2nd identification information memorized by the storage is compared and it has a control means (for example, CPU11 of drawing 15) which controls reproduction of the information currently recorded on the information recording medium corresponding to the comparison result.
[0043]Drawing 1 is a figure showing the composition of the 1 embodiment of this invention. The DVD player / recorder 1 is made as [supply / supply a video signal to the monitor 2 and / to the loudspeaker 3 / an audio signal]. The monitor 2 is made as [reproduce / a picture] based on the video signal supplied from the DVD player / recorder 1. The loudspeaker 3 is made as [reproduce / a sound] based on the audio signal supplied from the DVD player / recorder 1.
[0044]Drawing 2 is a figure showing the hardware constitutions of a DVD player / recorder 1. CPU(Central Processing Unit) 11 actually executes various programs. Fixed data and device ID (Identification code) peculiar to its DVD player / recorder 1 are fundamentally stored among the program for which CPU11 uses ROM(ReadOnly Memory) 12, or computation parameters. In the program used in execution of CPU11, and its execution, RAM(Random Access Memory) 13 stores a variable parameter suitably.
[0045]The recording reproduction section 14 records or reproduces data to DVD (drawing 3) with which it was equipped based on the inputted signal. LCD(Liquid Crystal Display) 16 and the touch panel 17 are connected to the internal bus via I/O interface 15. LCD16 displays the indicative data supplied from CPU11. The touch panel 17 is made as [supply / the signal

according to a user's operation / to CPU11 / via I/O interface 15].
[0046]CPU11, ROM12, RAM13, the recording reproduction section 14, and I/O interface 15 are mutually connected by the internal bus.
[0047]Drawing 3 is a figure explaining DVD. To fields other than the field only for reproduction where DVD4 is made into partial ROM structure, and a video data and audio information are recorded beforehand. finishing [disk reading] -- it is -- it has the recording track 21 which can write in the data in which things are shown, or the predetermined data of device ID of a DVD player / recorder 1, etc. The recording track 21 is constituted using cyanine dye or phthalocyanine system coloring matter, the pyrolysis of the coloring matter is carried out by the laser beam of the recording reproduction section 14, and data is recorded when an interface with surrounding resin changes further. Disk ID peculiar to the DVD4 is recorded on the field predetermined [other] in DVD4.
[0048]Drawing 4 is a flow chart explaining the processing which records device ID of a DVD player / recorder 1 on DVD4 performed when a DVD player / recorder 1 is equipped with DVD4. In Step S11, CPU11 operates the recording reproduction section 14, When the data recorded on the recording track 21 of DVD4 with which the DVD player / recorder 1 was equipped is read, it judges whether device ID of DVD4 is a recorded disk and it judges that device ID of DVD4 is not a recorded disk, procedure progresses to Step S12. In Step S12, CPU11 operates the recording reproduction section 14, device ID stored in the recording track 21 of the disk 4 ROM12 is written in, and processing is ended.
[0049]In Step S11, when it judges that device ID of DVD4 is a recorded disk, processing of Step S12 is skipped and processing is ended. Thereby, what device ID is doubly recorded on DVD4 is prevented.
[0050]Drawing 5 is a flow chart explaining operation of reproduction of a DVD player / recorder 1. In Step S21, CPU11 operates the recording reproduction section 14 and reads device ID recorded on the recording track 21 of DVD4. In Step S22, device ID stored in ROM12 CPU11, When it judges whether it is the same as that of device ID read at Step S21 and judges that device ID stored in ROM12 is the same as that of device ID read at Step S21, in Step S23, the recording reproduction section 14 is made to perform reproduction of DVD14, and processing is ended.
[0051]When it judges that device ID stored in ROM12 is not the same as that of device ID read from DVD4 in Step S22, in Step S24 CPU11, A predetermined error message (for example, message "this disk is unreproducible") is displayed on LCD16, and processing is ended.
[0052]If it is made above, the reproduction execution of DVD4 will be attained only by the DVD player / recorder 1 with which it equipped first.
[0053]Drawing 6 is a figure showing other hardware constitutions of a DVD player / recorder 1. The same numerals are given to the case in drawing 2, and the corresponding portion, and the

explanation is omitted suitably. Fixed data is fundamentally stored among the program for which CPU11 uses ROM12, or computation parameters. EEPROM(Electrically Erasable Programable Read Only Memory) 18 stores the information which needs to hold after power OFF, such as disk ID.

[0054]Drawing 7 is a flow chart explaining the processing which records disk ID on a DVD player / recorder 1 performed when a DVD player / recorder 1 is equipped with DVD4. In Step S31, CPU11 operates the recording reproduction section 14, When judged with the data recorded on the recording track 21 of DVD4 with which the DVD player / recorder 1 was equipped being read, DVD4 reading, it judging whether it is a disk of ending, DVD4 reading, and it not being a disk of ending, procedure progresses to Step S32. In Step S32, CPU11 operates the recording reproduction section 14 and reads disk ID currently recorded on the predetermined field (field only for playback) of DVD4. CPU11 makes EEPROM18 memorize read disk ID in Step S33. In Step S34, CPU11 operates the recording reproduction section 14, the data (a flag or disk ID may be sufficient) which shows that it is a read disk (played once [at least]) to the recording track 21 of DVD4 is written in, and processing is ended.

[0055]In Step S31, when judged with DVD4 reading and it being a disk of ending, processing of Steps S32 thru/or S34 is skipped, and processing is ended. Thereby, while the double writing to the recording track 21 of DVD4 is prevented, disk ID of played DVD4 is prevented from being memorized by EEPROM18 of other DVD player / recorders 1 once [at least].

[0056]Drawing 8 is a flow chart with which a DVD player / recorder 1 explains the processing which reproduces the information recorded on DVD4. In Step S41, CPU11 operates the recording reproduction section 14 and reads disk ID recorded on the predetermined field (reproduction dedicated regions) of DVD4. In Step S42, disk ID as disk ID read at Step S41 with CPU11 [same] judges whether it is recorded on EEPROM18, When judged with the same disk ID as read disk ID being recorded, in Step S43, the recording reproduction section 14 is made to perform playback of DVD14, and processing is ended.

[0057]In Step S42, when judged with the same disk ID as read disk ID not being memorized by EEPROM18, in Step S44, CPU11 displays an error message on LCD16 and processing is ended.

[0058]As mentioned above, DVD4 can use the recorded information only by the DVD player (it equipped with DVD4 for the first time) / recorder 1 which recorded disk ID of DVD4.

[0059]Drawing 9 is a figure showing other hardware constitutions of a DVD player / recorder 1. The same numerals are given to the case in drawing 6, and the corresponding portion, and the explanation is omitted. The seal data reading part 31 reads the pattern of the bar code of the surface of the seal 41 stuck on DVD4 explained by drawing 10, and outputs data.

[0060]Drawing 10 is a figure explaining other DVD4. the circular seal [4 / this / DVD] 41 centering on the axis of rotation of DVD4 -- pasting ********. The user of a DVD player /

recorder 1 notifies device ID of a DVD player / recorder 1 to the store of DVD4 at the time of the purchase of DVD4 (device ID is recorded on a memory card etc. and it may be made to notify). A store sticks on DVD4 the seal 41 with which the bar code corresponding to device ID of a DVD player / recorder 1 was printed, and hands it over to the user of a DVD player / recorder 1. The seal 41 is again made as [stick / it / on DVD4], once it removes.

[0061]drawing 11 is a flow chart with which a DVD player / recorder 1 explains the processing in which the seal 41 reproduces pasting **** DVD4. In Step S51, when it judges whether the recording reproduction section 14 of the DVD player / recorder 1 is equipped with DVD4 and judged with not being equipped with DVD4, CPU11 returns to Step S51, and it repeats processing until it is equipped with DVD4.

[0062]In Step S51, when judged with being equipped with DVD4, it progresses to Step S52, and the seal data reading part 31 reads the bar code of the seal 41, and sends the result to CPU11. In Step S53, the same data as the bar code of the seal 41 CPU11, When it judges whether it is recorded on ROM12 and judges that it is recorded on ROM12 by the same data as the bar code of the seal 41, procedure progresses to Step S54, and the recording reproduction section 14 performs reproduction and ends processing.

[0063]In Step S53, when it judges that it is not recorded on ROM12 by the same data as the bar code of the seal 41, procedure progresses to Step S55, CPU11 displays a predetermined error message on LCD16, and processing is ended.

[0064]Thus, DVD4 is unreproducible by the DVD player / a recorder 1 a DVD player / except recorder 1 which has device ID corresponding to the bar code of the seal 41.

[0065]Drawing 12 is a figure showing other hardware constitutions of a DVD player / recorder 1. The same numerals are given to the case in drawing 6, and the corresponding portion, and the explanation is omitted suitably. The seal data reading part 31 reads the pattern of the bar code printed by the surface of the seal 41 stuck on DVD4 of drawing 13 mentioned later, and outputs data.

[0066]drawing 13 is a figure which explains the structure of the pasting **** seal 41 to DVD4 reproduced by the DVD player / recorder 1 of drawing 12. as for the seal 41 of drawing 13, the bar code corresponding to device ID of a DVD player / recorder 1 is printed like the case of drawing 10 -- a store -- DVD4 -- pasting ****. As shown in drawing 13 (A), the seal 41 comprises the lower layer part 52 pasted up on DVD4, and the upper levels 51 who the part tore off by the user, and were stuck on it so that it might be possible. Once the upper levels 51 remove, they are again made as [stick / it / on the lower layer part 52]. Drawing 13 (B) is a figure showing the pattern of the bar code of the seal 41 before tearing off some upper levels 51. The pattern P1 in the left half of [51L] the upper levels 51 and the pattern P2 in the right half of the upper levels 51 appear in the surface of the seal 41.

[0067]Drawing 13 (C) is a figure explaining the state where some upper levels 51 were torn off.

If the upper levels 51 are torn off, the upper levels 51 are made as [go out / in the position of the predetermined break 53]. In this state, the pattern P1 in the left half of [51L] the upper levels 51 and the pattern P3 in the right half of the lower layer part 52 appear in the surface of the seal 41. The seal data reading part 31 of a DVD player / recorder 1 reads the pattern of the surface of the upper levels 51 or the lower layer part 52, and outputs the data corresponding to a pattern.

[0068]drawing 14 is a flow chart explaining the processing in which the seal 41 with which a DVD player / recorder 1 consists of the upper levels 51 and the lower layer part 52 reproduces pasting **** DVD4. In Step S71, when it judges whether it is equipped with DVD4 and judged with not being equipped with DVD4, the recording reproduction section 14 of a DVD player / recorder 1 returns to Step S71, and it repeats processing until it is equipped with DVD4.

[0069]In Step S71, when judged with being equipped with DVD4, it progresses to Step S72, and the seal data reading part 31 reads the data of the seal 41, and sends it to CPU11. In Step S73, when it judges whether the data read in Step 72 is the upper levels' 51 data and is judged with it being the upper levels' 51 data, he follows CPU11 to Step S74. In Step S74, when CPU11 judges whether the seal data reading part 31 detected the break 53 of the seal 41 and it is judged with the break 53 of the seal 41 not being detected, procedure progresses to Step S75.

[0070]The seal data reading part 31 reads the pattern (the pattern P1 and the pattern P2) printed by the upper levels' 51 surface, and makes EEPROM18 memorize corresponding data in Step S75. In Step S76, the recording reproduction section 14 discharges DVD4. In Step S77, CPU11 displays the message which shows what the upper levels 51 of the seal 41 should be removed to LCD16, and it should be again equipped with, and procedure returns to Step S71.

[0071]If a user removes the upper levels 51 and equips with DVD4 again according to this message, the pattern P3 of the lower layer part 52 will be read by the seal data reading part 31 at Step S72. As a result, the pattern read in Step S73, It is judged with it not being the upper levels' 51 pattern P1, and P2, progress to Step S78, and CPU11, The same data as the data corresponding to the upper levels' 51 pattern P1 and the pattern P3 of the lower layer part 52 which were read in Step S72, Judge whether it is recorded on EEPROM18 and the same data as the data corresponding to the upper levels' 51 pattern P1 and the pattern P3 of the lower layer part 52, When judged with being recorded on EEPROM18, procedure progresses to Step S79, and the recording reproduction section 14 performs reproduction and ends processing.

[0072]When it judges that it is not recorded on EEPROM18 by the same data as the data corresponding to the upper levels' 51 pattern P1, and the pattern P3 of the lower layer part 52 in Step S78, at Step S74. When judged with the break 53 existing in the seal 41, procedure progresses to Step S80 (when a user sticks again the seal 41 removed once), CPU11 displays

a predetermined error message on LCD16, and processing is ended.
[0073]As mentioned above, DVD4 is unreproducible by the DVD player / a recorder 1 a DVD player / except recorder 1 which recorded the data corresponding to the seal's 41 the pattern P1 and the pattern P2 of the upper levels 51 of DVD4 predetermined. A DVD player / recorder 1 does not reproduce DVD4 which the upper levels 51 of the seal 41 took the side of.
[0074]Drawing 15 is a figure showing other hardware constitutions of a DVD player / recorder 1. The same numerals are given to the case in drawing 2, and the corresponding portion, and the explanation is omitted suitably. RAM card 10 which can be desorbed freely is connected to the internal bus via the RAM card interface 32. The user of a DVD player / recorder 1 notifies device ID of a DVD player / recorder 1 to the store of DVD4 at the time of the purchase of DVD4. A store records disk ID of DVD4 and device ID of a DVD player / recorder 1 to purchase on RAM card 10, and hands over RAM card 10 to the user (buyer of DVD4) of a DVD player / recorder 1 with DVD4.
[0075]At the time of playback of DVD4, the user of a DVD player / recorder 1 equips a DVD player / recorder 1 with RAM card 10 (RAM card 10 in which disk ID [of DVD4] and device ID of the DVD player / recorder 1 were recorded) corresponding to DVD4, and performs playback. Disk ID of a DVD player / recorder 1 of the disks ID and DVD4 memorized by RAM card 10 corresponds, And only when device ID and device ID of a DVD player / recorder 1 which were memorized by RAM card 10 are in agreement, reproduction is performed, when other, an error message is displayed on LCD16 and reproduction is not performed.
[0076]Thus, DVD4 is unreproducible by the DVD player / a recorder 1 a DVD player / except recorder 1 which has device ID memorized by RAM card 10.
[0077]Drawing 16 is a figure showing the composition of other 1 embodiments of this invention. DVD player 91 is made as [supply / supply a video signal to the monitor 92 and / to the loudspeaker 93 / an audio signal]. The monitor 92 is made as [reproduce / a picture] based on the video signal supplied from DVD player 91. The loudspeaker 93 is made as [reproduce / a sound] based on the audio signal supplied from DVD player 91.
[0078]DVD player 91, and the DVD player/recorder 1 are connected by the IEEE1394 serial bus 81.
[0079]Drawing 17 is a figure showing the hardware constitutions of DVD player 91. The fundamental composition which has given the numerals of the level of No. 100 to each part is the same as that of the DVD player / recorder 1 of drawing 2, the same numerals as the case of drawing 2 are given to the case in drawing 2, and the corresponding portion at lower 2 figure, and the explanation is omitted suitably. The regenerating section 162 reproduces the data recorded on DVD4 with which it was equipped. IEEE1394 interface 161 is an I/O interface based on IEEE1394 to which the IEEE1394 serial bus 81 is connected. The regenerating section 162, IEEE1394 interface 161, CPU111, ROM112, RAM113, and I/O interface 115 are

mutually connected by the internal bus.

[0080]Drawing 18 is a figure showing the hardware constitutions of a DVD player / recorder 1. The same numerals are given to the case in drawing 2, and the corresponding portion, and the explanation is omitted suitably. IEEE1394 interface 61 connected to the internal bus is an I/O interface based on IEEE1394 to which the IEEE1394 serial bus 81 is connected. Other composition is the same as that of the case in drawing 2.

[0081]Drawing 19 is a flow chart explaining operation of a DVD player / recorder 1 when recording the contents currently recorded on DVD4 with which DVD player 91 was equipped on recordable DVD4 equipped by the DVD player / recorder 1. In Step S81, the recording reproduction section 14, When the data of the predetermined field of DVD4 for record with which the DVD player / recorder 1 was equipped is read, it judges whether device ID is DVD4 recorded and it judges that device ID is not DVD4 recorded, it progresses to Step S82. CPU11 operates the recording reproduction section 14 and makes device ID stored in ROM12 record on the predetermined field of equipped DVD4 for record in Step S82. In Step S83, the recording reproduction section 14, It records on DVD4 equipped with the data recorded on DVD4 which IEEE1394 interface 61 received via the IEEE1394 serial bus 81, and with which DVD player 91 was equipped by the DVD player / recorder 1, and processing is ended.

[0082]In Step S81, when it judges that device ID is DVD4 recorded, procedure progresses to Step S84. Device ID recorded on the predetermined field of DVD4 for record to which the DVD player / recorder 1 was equipped with CPU11 in Step S84, When it judges whether device ID stored in ROM12 is the same and is judged with device ID recorded on the predetermined field of DVD4 and device ID stored in ROM12 being the same, procedure progresses to Step S83.

[0083]In Step S84, when judged with device ID recorded on the predetermined field of DVD4 and device ID stored in ROM12 not being the same, procedure progresses to Step S85, and CPU11 displays an error message on LCD16 and ends processing.

[0084]Although reproduction is performed in the DVD player / recorder 1 which recorded the data by performing regeneration shown in drawing 5, DVD4 on which data was recorded by processing of drawing 19, Reproduction is not performed by the DVD player/a recorder a DVD player / except recorder 1 which recorded the data. If device ID of a DVD player / recorder 1 recorded on the devices ID and DVD4 stored in ROM12 does not correspond when DVD4 with which it was equipped is having device ID already recorded, it does not perform record.

[0085]Drawing 20 is a flow chart explaining processing in case the DVD player / recorder 1 of drawing 18 format DVD4. In Step S91, the recording reproduction section 14 performs the format of DVD4 with which it was equipped. In Step S92, CPU11 operates the recording reproduction section 14, device ID memorized by ROM12 is recorded on DVD4, and processing is ended.

[0086]Although reproduction is performed in the DVD player / recorder 1 which performed the

format by performing regeneration of drawing 5, DVD4 formatted by processing of drawing 20, Reproduction is not performed by the DVD player/a recorder a DVD player / except recorder 1 which performed the format.

[0087]Drawing 21 is a figure in drawing 16 showing the hardware constitutions of other DVD player / recorders 1. The same numerals are given to the case in drawing 6, and the corresponding portion, and the explanation is omitted suitably. IEEE1394 interface 61 is an I/O interface based on IEEE1394 to which the IEEE1394 serial bus 81 is connected. Other composition is the same as that of the case in drawing 6.

[0088]Drawing 22 is a flow chart explaining processing of DVD player 91 when recording on DVD4 for record with which transmitted the contents recorded on DVD4 with which DVD player 91 was equipped, and the DVD player / recorder 1 of drawing 21 were equipped. In Step S101, the regenerating section 162 of DVD player 91 reads disk ID of DVD4 with which it was equipped, and sends the disk ID to CPU111. In Step S102, CPU111 computes disk ID for record based on disk ID sent from the regenerating section 162 based on a predetermined formula. In Step S103, IEEE1394 interface 161 transmits disk ID for record computed at Step S102 to a DVD player / recorder 1 via the IEEE1394 serial bus 81. In Step S104, IEEE1394 interface 161 transmits the data of DVD4 which the regenerating section 162 read to a DVD player / recorder 1 via the IEEE1394 serial bus 81.

[0089]Drawing 23 is a flow chart explaining processing of a DVD player / recorder 1 when recording the contents transmitted from DVD player 91 on DVD4 for record equipped by the DVD player / recorder 1 of drawing 21. In Step S111, IEEE1394 interface 61 of a DVD player / recorder 1 receives transmitted disk ID for record via the IEEE1394 serial bus 81, and sends it to CPU11. In Step S112, CPU11 records disk ID for record on EEPROM18. In Step S113, CPU11 operates the recording reproduction section 14 and records disk ID for record on the predetermined field of DVD4 with which it was equipped. In Step S114, the recording reproduction section 14 is recorded on DVD4 equipped with the data recorded on DVD4 with which DVD player 91 which IEEE1394 interface 61 received via the IEEE1394 serial bus 81 was equipped by the DVD player / recorder 1.

[0090]Although reproduction is performed in the DVD player / recorder 1 which recorded the data when DVD4 which had data recorded by processing of drawing 23 performed regeneration of drawing 8, reproduction is not performed by other DVD player / recorder 1.

[0091]As mentioned above, reproduction of information is attained only by the predetermined DVD player / recorder 1, or the DVD player/recorder 1 by which DVD4 corresponded.

[0092]A DVD player / recorder 1, DVD player 91, or the DVD player/recorder 1 enables it to write in ID peculiar to a user, and it may be made to make the same role as device ID in this specification.

[0093]The recording track 21 of DVD4 of drawing 3, The predetermined data in which it is

shown that disk ID is not read is recorded beforehand, and it may be made for a DVD player / recorder 1 to eliminate the predetermined data recorded on the recording track 21 of DVD4 in Step S34 of drawing 7.

[0094]Drawing 6, drawing 9, and EEPROM18 of drawing 21 are good also as a dismountable RAM card from a DVD player / recorder 1, or the DVD player/recorder 1.

[0095]Although the seal 41 of drawing 10 was explained as doughnut shape, it is a seal which printed the rectangular bar code, and may be stuck on the position of DVD4. A bar code may be directly printed to DVD4.

[0096]In the received-data recording processing of the DVD player / recorder 1 of drawing 19, DVD player 91, Device ID recorded on ROM12 may be transmitted to a DVD player / recorder 1, and a DVD player / recorder 1 may perform processing which records device ID of DVD player 91 which received on the predetermined field of DVD4 for record with which it was equipped in Step S82.

[0097]In Step S102 of drawing 22, although it was explained based on disk ID sent from the regenerating section 62 that CPU11 computed disk ID for record, it may compute disk ID for record based on a formula independent of disk ID sent from the regenerating section 62.

[0098]In drawing 16 thru/or drawing 23, although supply of data was explained as DVD player 91, As long as it can supply predetermined data, communication media, such as a computer network, satellite communication, terrestrial communication, a telephone line, etc. besides recording media, such as a magnetic disk, CD-ROM, and solid-state memory, may be passed.

[0099]In this specification, although the medium which records data was explained as DVD4, solid-state memory which records other data, such as an optical disc, magnetic tape, a magnetic disk, or semiconductor memory, may be sufficient as it.

[0100]As a distribution medium which provides a user with the computer program which performs processing which was described above, communication media, such as a network, a satellite, etc. besides recording media, such as a magnetic disk, CD-ROM, and solid-state memory, can be used.

[0101]

[Effect of the Invention]According to the information recording medium according to claim 1, at least, once, since the hysteresis information showing having been reproduced was recorded, it enables an information reproducing device to reproduce information only with the specific information reproducing device which read the data which specifies an information recording medium.

[0102]According to the information reproducing device according to claim 3, the information reproduction mode according to claim 5, and the distribution medium according to claim 6. Reproduce the hysteresis information which recorded the hysteresis information as which an information recording medium expresses having been reproduced once at least on the

information recording medium, and was recorded on the information recording medium, and it corresponds to the reproduced hysteresis information, Since reproduction of the information currently recorded on the information recording medium was controlled, it becomes possible to reproduce information only with the specific information reproducing device corresponding to an information recording medium.

[0103]According to the information storage playback equipment according to claim 7, the information storage regeneration method according to claim 10, and the distribution medium according to claim 11. Reproduce the hysteresis information which recorded the hysteresis information as which an information recording medium expresses what was recorded once at least on the information recording medium, and was recorded on the information recording medium, and it corresponds to the reproduced hysteresis information, Since the record or reproduction of information to an information recording medium was controlled, it becomes possible to record or reproduce information only with the specific information storage playback equipment corresponding to an information recording medium.

[0104]Since the identification information which identifies an information recording medium or an information reproducing device was recorded on the identification device according to the information recording medium according to claim 12, it becomes possible to reproduce the information currently recorded on the information recording medium only with the information reproducing device corresponding to identification information.

[0105]According to the information reproducing device according to claim 14, the information reproduction mode according to claim 16, and the distribution medium according to claim 17. Since the identification information currently recorded on the identification device is reproduced and reproduction of the information currently recorded on the information recording medium was controlled corresponding to the reproduced identification information, it becomes possible to reproduce information only with the specific information reproducing device corresponding to an information recording medium.

[0106]According to the information storage playback equipment according to claim 18, the information storage regeneration method according to claim 19, and the distribution medium according to claim 20. The information identification data which reproduced the information identification data which memorized information identification data, recorded information identification data on the information recording medium, and was recorded on the information recording medium, and was reproduced, Since record or reproduction was controlled corresponding to the comparison result as compared with the information identification data memorized, it becomes possible to record or reproduce information only with the specific information storage playback equipment corresponding to an information recording medium.

[0107]Since the identification information of an information recording medium and the identification information of an information reproducing device which are reproduced by an

information reproducing device were memorized according to the storage according to claim 21, it becomes possible to reproduce information only with the predetermined information reproducing device which has the identification information of a recording medium, and the corresponding information.

[0108]According to the information reproducing device according to claim 22, the information reproduction mode according to claim 23, and the distribution medium according to claim 24. The 4th identification information that memorized the 3rd identification information that identifies an information reproducing device, reproduced the 4th identification information that identifies the information recording medium currently recorded on the information recording medium, and was reproduced, The 3rd identification information that compares the 1st identification information memorized by the storage and is memorized, The 2nd identification information memorized by the storage is compared, and since reproduction of the information currently recorded on the information recording medium corresponding to the comparison result was controlled, it becomes possible to reproduce information only with the specific information reproducing device corresponding to a storage and an information recording medium.

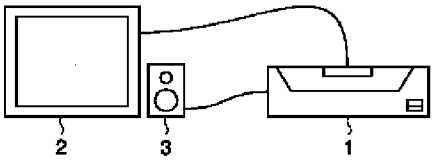
[Translation done.]

* NOTICES *

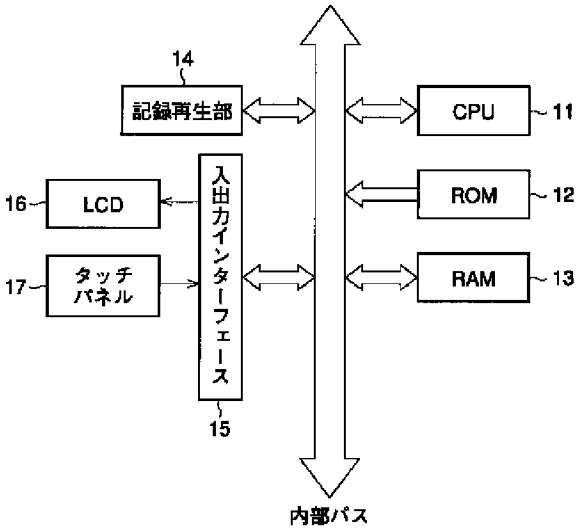
1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

[Drawing 1]

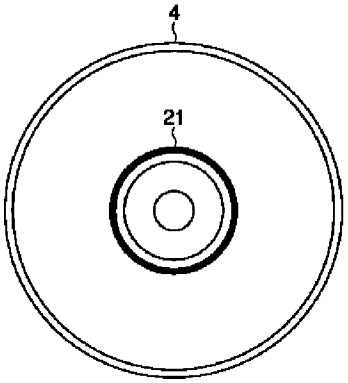


[Drawing 2]

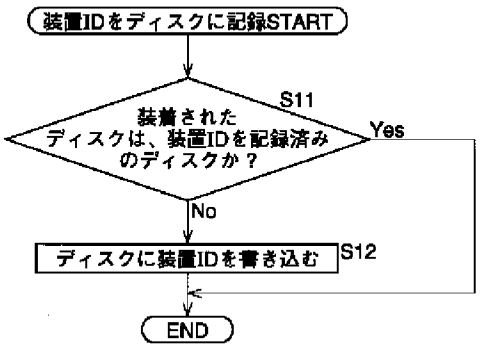


DVDプレーヤ／レコーダ１

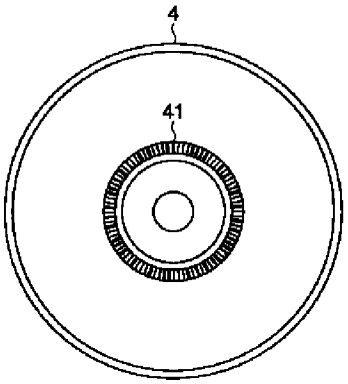
[Drawing 3]



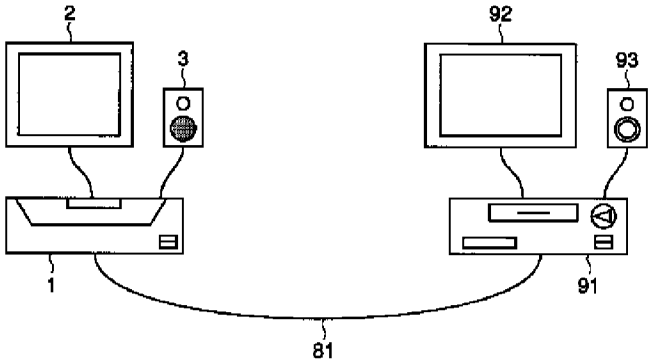
[Drawing 4]



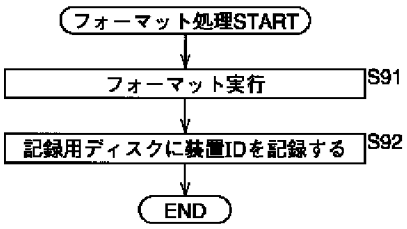
[Drawing 10]



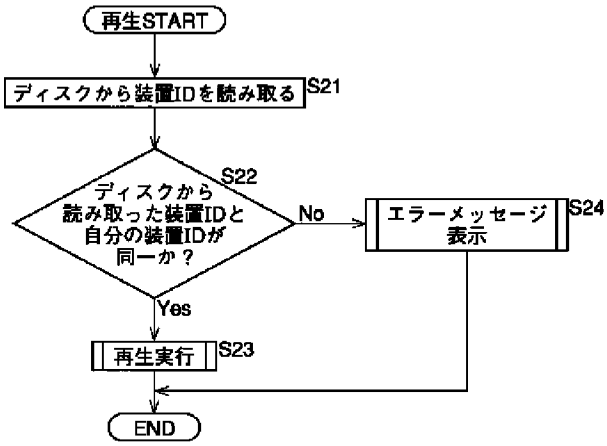
[Drawing 16]



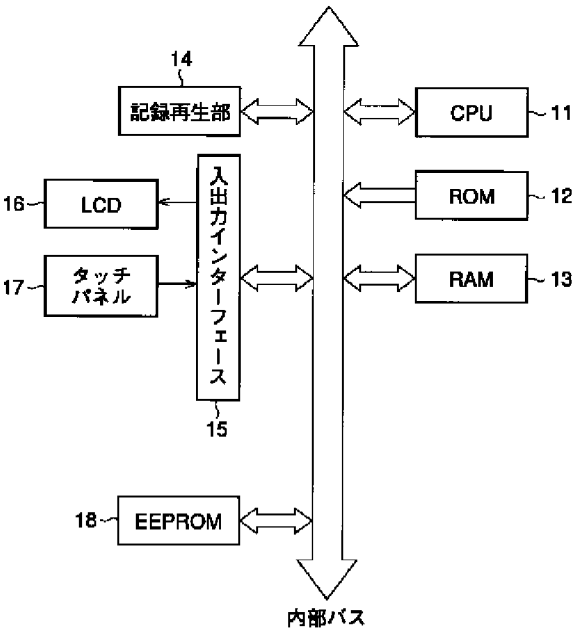
[Drawing 20]



[Drawing 5]

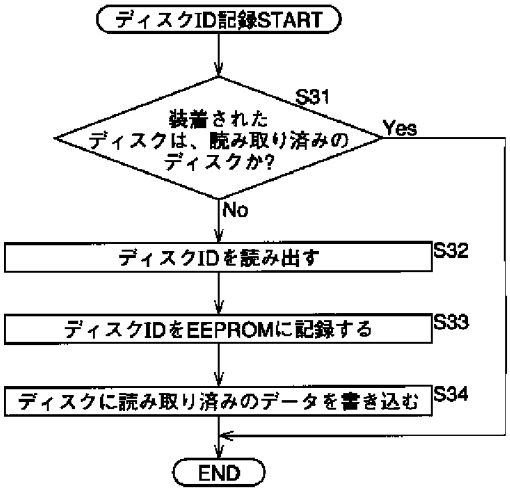


[Drawing 6]

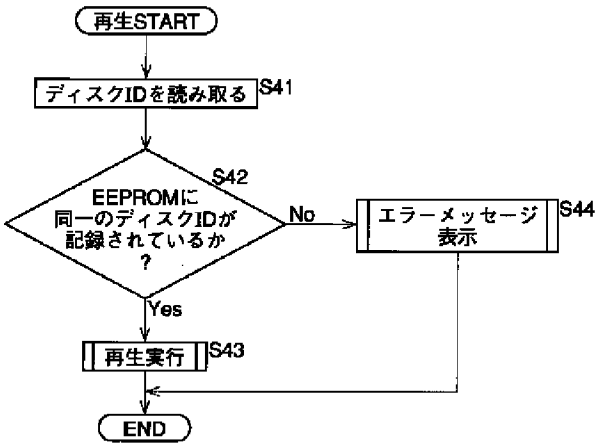


DVDプレーヤ／レコーダ 1

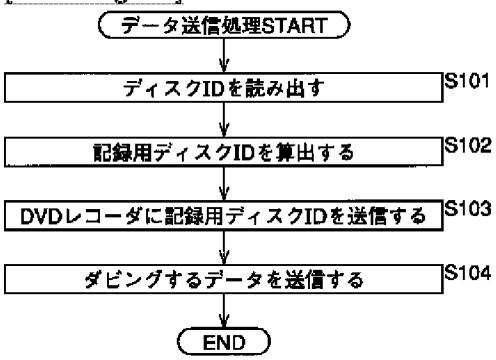
[Drawing 7]



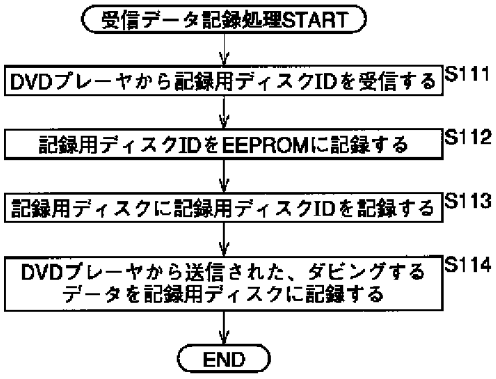
[Drawing 8]



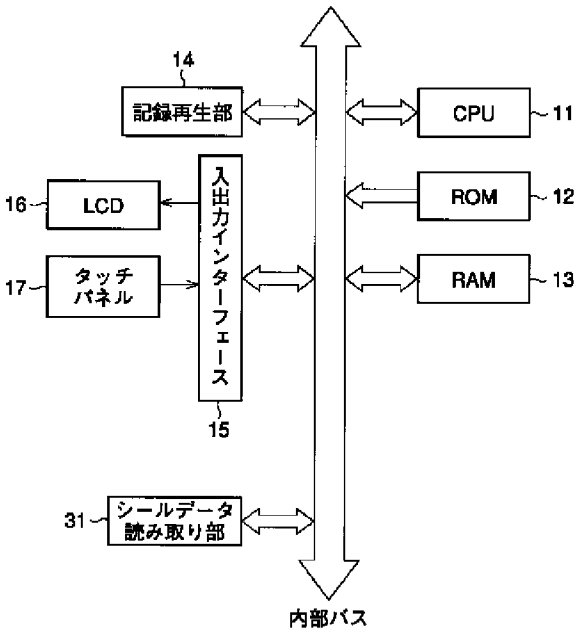
[Drawing 22]



[Drawing 23]

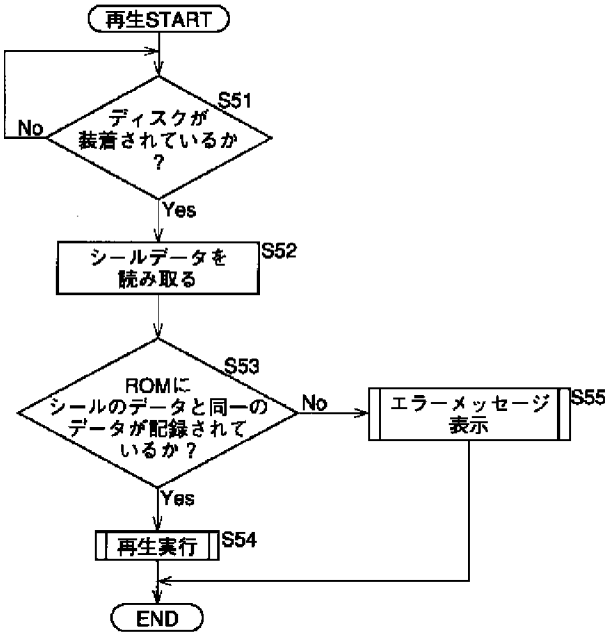


[Drawing 9]

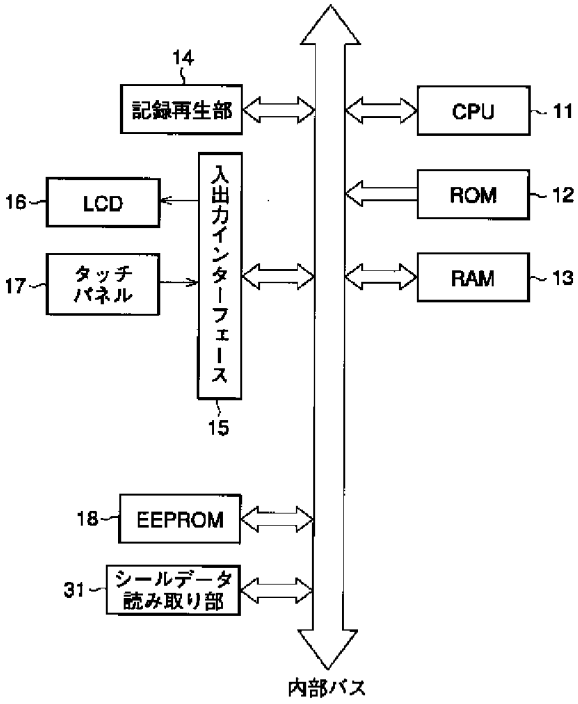


DVDプレーヤ／レコーダ１

[Drawing 11]

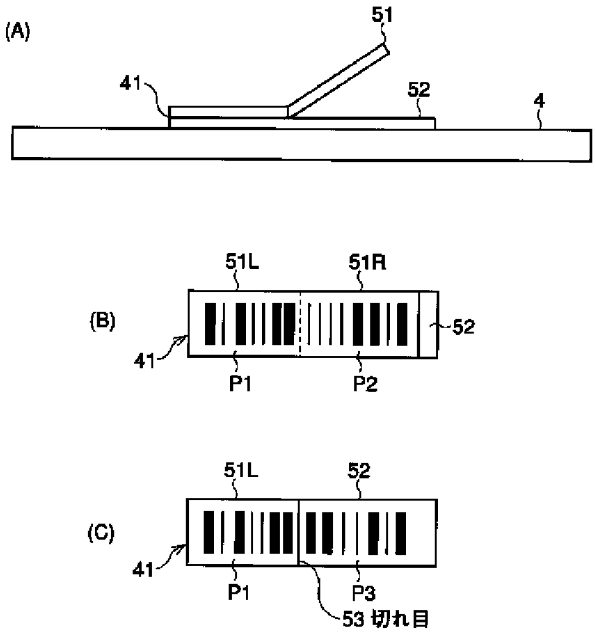


[Drawing 12]

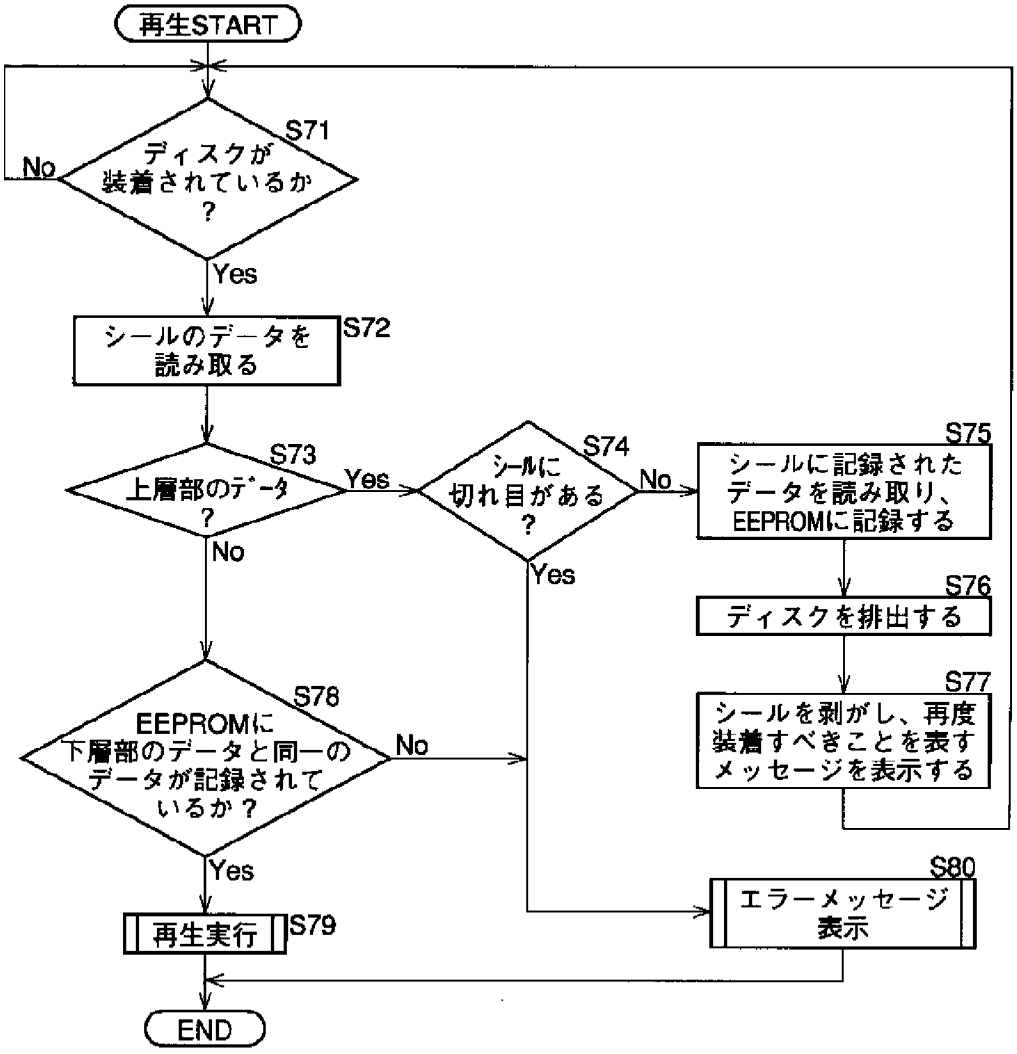


DVDプレーヤ／レコーダ 1

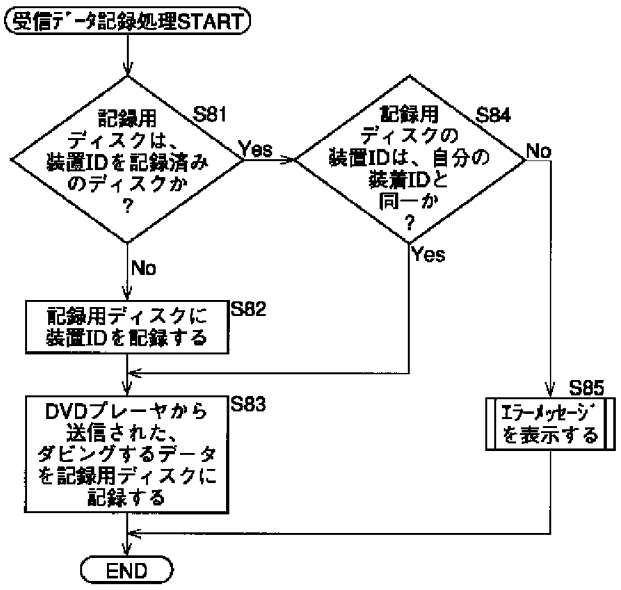
[Drawing 13]


(A)
51
41
52
4
(B)
51L
51R
52
41
P1
P2
(C)
51L
52
41
P1
P3
53 切れ目

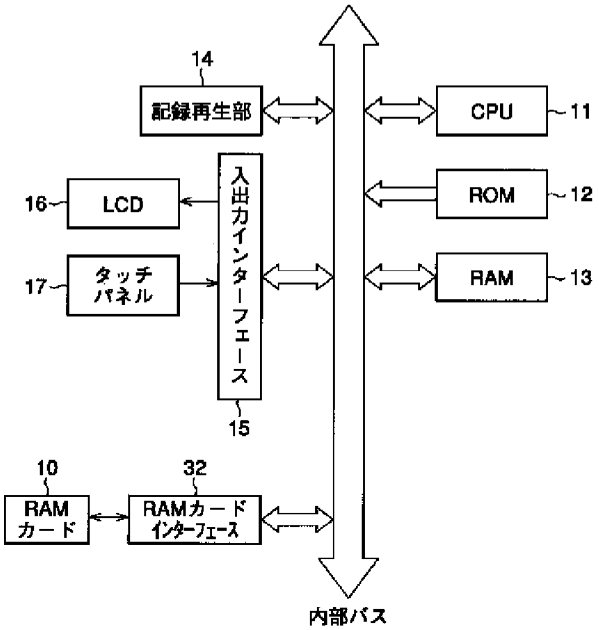
[Drawing 14]


再生START
S71
ディスクが装着されているか？
No
Yes
S72
シールのデータを読み取る
S73
上層部のデータ？
Yes
No
S74
シールに切れ目がある？
No
Yes
S75
シールに記録されたデータを読み取り、EEPROMに記録する
S76
ディスクを排出する
S77
シールを剥がし、再度装着すべきことを表すメッセージを表示する
S78
EEPROMに下層部のデータと同一のデータが記録されているか？
No
Yes
S79
再生実行
S80
エラーメッセージ表示
END

[Drawing 19]

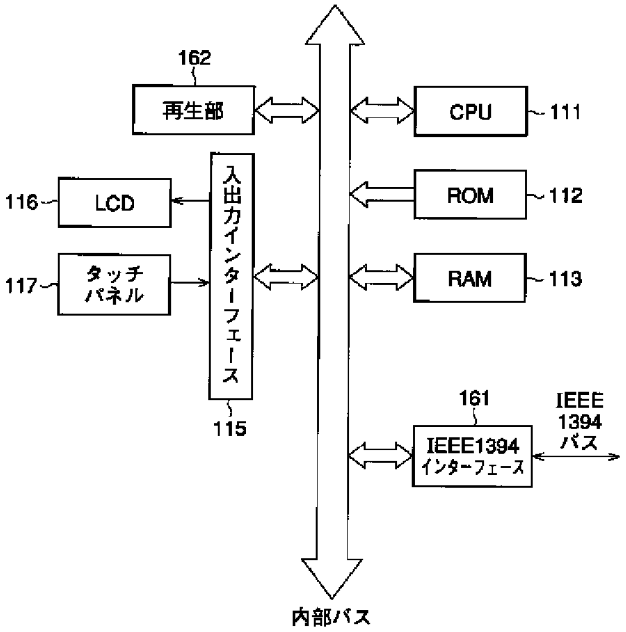


[Drawing 15]



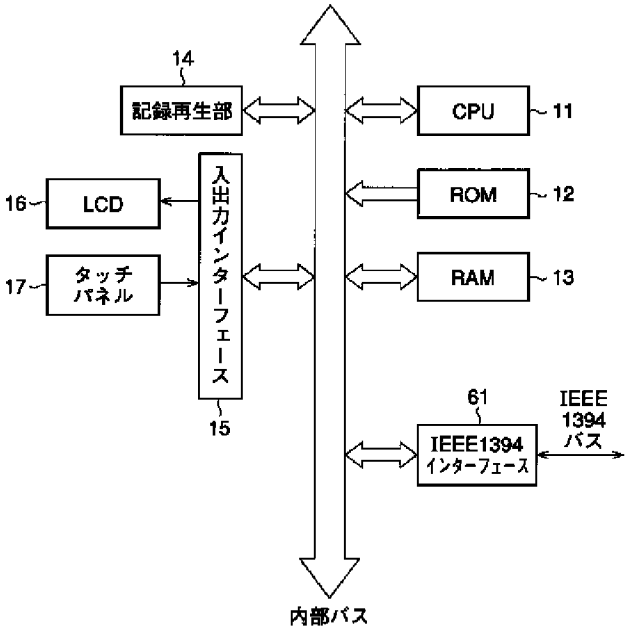
DVDプレーヤ／レコーダ１

[Drawing 17]



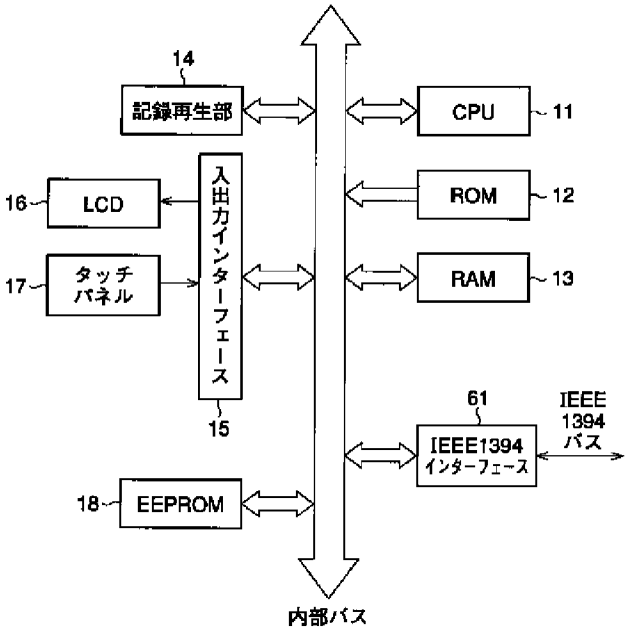
DVDプレーヤ 91

[Drawing 18]



DVDプレーヤ／レコーダ 1

[Drawing 21]



DVDプレーヤ／レコーダ 1

[Translation done.]